

WHAT IS CLAIMED IS:

Subai
Cont 1. A sensor integrated on a single semiconductor substrate, comprising:

5 a sensor block including a pixel unit and a scanning unit for selecting a pixel of said pixel unit, said pixel unit comprising a plurality of pixels each including a light-receiving element;

a signal processing block for processing a signal output from said sensor block; and

10 means for setting a power supply voltage or an amplitude or high level of a clock signal used in said sensor block to be higher than a power supply voltage of said signal processing block.

15 2. A sensor according to claim 1, wherein a gate insulating layer of at least some insulated gate transistors of said sensor block is thicker than that of an insulated gate transistor used in said signal processing block.

20 3. A sensor according to claim 1, wherein a well density of at least some insulated gate transistors of said sensor block is lower than that of an insulated gate transistor used in said signal processing block.

25 4. A sensor according to claim 1, wherein a threshold voltage of at least some insulated gate

transistors of said sensor block is higher than that of an insulated gate transistor used in said signal processing block.

5 5. A sensor according to claim 1, wherein said light-receiving element is a buried photodiode.

10 6. A sensor according to claim 5, wherein the pixel has a charge/voltage conversion unit and is connected to said buried photodiode through a transfer switch.

15 7. A sensor according to claim 1, wherein said sensor block and said signal processing block are connected via level shift means for shifting a signal level.

20 8. A sensor according to claim 1, wherein said signal processing block comprises an A/D conversion circuit for converting an analog signal into a digital signal.

25 9. A sensor according to claim 8, wherein said signal processing block comprises signal processing means for forming a luminance signal and a chrominance signal.

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10. An image sensing apparatus comprising:
a sensor processing system including an image
sensor and a driving circuit for said image sensor;
a data processing system including an A/D
conversion unit and a DSP (Digital Signal Processor);
an AE/AF processing system for calculating and
processing to attain an automatic exposure function
(AE) and an automatic focusing function (AF);
an output processing system for encoding data in
accordance with an output apparatus; and
a system control unit for controlling a power
source or an operation clock of each processing system,
wherein said system control unit includes means
for independently turning on or off at least one of the
power source and the operation clock of each processing
system, and at least one of the power source and the
operation clock of at least one processing system is
turned off on the basis of a control signal from said
system control unit.

11. An apparatus according to claim 10, wherein at
least one of the power source and the operation clock
of at least one processing system is turned off or on
during a period except a vertical effective period of a
video signal.

12. An apparatus according to claim 10, wherein at

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13. An apparatus according to claim 10, wherein at least one of the power source and the operation clock of at least one processing system is turned on before at least a processing circuit which is going to process starts operation.

14. An apparatus according to claim 10, wherein circuits including said processing systems and control units of said processing systems are formed in a one-chip LSI.

15. An apparatus according to claim 10, wherein said system control unit determines, in accordance with an instruction from an operation unit, an AE/AF mode in which the automatic exposure function (AE) and the automatic focusing function (AF) are executed, an image sensing mode in which an image sensing signal is obtained from said image sensor, and a data output mode in which the data is encoded and output in accordance with said output apparatus, and turns on/off the power source of a necessary processing system necessary in accordance with the mode.

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16. An image sensing apparatus comprising:
a sensor system including an image sensor and a
driving circuit for said image sensor;
a data processing system including an A/D
conversion unit and a DSP;
an AE/AF processing system for calculating to
attain an automatic exposure function (AE) and an
automatic focusing function (AF);
an output processing system for encoding data in
accordance with an output apparatus;
a system control unit for designating an input
clock frequency of each of said processing systems; and
clock control means for changing the clock
frequency of each processing system on the basis of a
control signal from said system control unit.

17. An apparatus according to claim 16, further
comprising change means for selecting the input clock
frequency of each processing system from a plurality of
clock frequencies and changing the input clock
frequency in accordance with an instruction from said
clock control means, setting means for determining
whether operation of each processing system is
unnecessary or operation at a low clock frequency
suffices and setting the input clock of each processing
system to be low, and high-speed setting means for
setting the input clock frequency of each processing

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system which requires high-speed operation to be high.

18. An apparatus according to claim 16, wherein
said processing systems have clocks capable of
5 individually changing the input clock frequencies,
respectively.

19. An apparatus according to claim 16, further
comprising means for controlling the clock frequency of
10 each processing system on the basis of the clock
control signal.

20. An apparatus according to claim 16, wherein
circuits including said processing systems and control
15 units of said processing systems are formed in a
one-chip LSI.

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